

ABSTRACT

A sonic emitter, horn array with enhanced emitter-to-air acoustic coupling, with particular application to ultrasonic frequencies. The emitter comprises a plate support member having opposing first and second faces separated by an intermediate plate body. The plate body includes a plurality of conduits configured as an array of acoustic horns, with a small throat opening at the first face and an intermediate horn section which diverges to a broad mouth opening at the second face. An emitter membrane is positioned in direct contact with the first face and extends across the small throat openings. The emitter membrane is biased for (i) applying tension to the membrane extending across the throat openings and (ii) displacing the membrane into a non-planar configuration.